

**To:** LaVigne, Paul[plavigne@mt.gov]  
**Cc:** Grant Weaver (g.weaver@cleanwaterops.com)[g.weaver@cleanwaterops.com]; DeVaney, Rainie[rdevaney@mt.gov]; Suplee, Mike[msuplee@mt.gov]; Kenning, Jon[JKenning@mt.gov]; Kusnierz, Lisa[kusnierz.lisa@epa.gov]  
**From:** Laidlaw, Tina  
**Sent:** Thur 8/25/2016 9:40:08 PM  
**Subject:** RE: Colstrip Nutrient Optimization Report  
8 case studies on implementing low-cost modification to improve potw nutrient reduction-combined\_508\_-\_august.pdf  
Colstrip Nutrient Optimization Report - revised Tina edits.docx

Paul,

Thanks for sending this along. So sorry it has taken me so long to sit down and review the document.

I think this is a great start. I inserted some edits in the document. I also think it may be good to ensure the report contains much of the information summarized in the case studies included in EPA's recent draft "Case Studies on Implementing Low-Cost Modifications to Improve Nutrient Reduction at Wastewater Treatment Plants." I think that will position the reports for feeding into future case studies. I've attached a copy of that report so folks can see what the case studies look like.

In my opinion, the more that can be provided regarding the optimization details, the better. That also will show how each effort is customized to the specifics of the individual facility.

Thanks for the opportunity to provide review and input. Hope this feedback is helpful. Let me know if you have any questions.

Tina

**From:** LaVigne, Paul [mailto:plavigne@mt.gov]  
**Sent:** Thursday, July 14, 2016 9:44 AM  
**To:** DeVaney, Rainie <rdevaney@mt.gov>; jmay@mt.gov; Suplee, Mike <msuplee@mt.gov>;

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**Subject:** Colstrip Nutrient Optimization Report

Rainie, Jeff, Mike and Tina,

As you know, one of the requirements a discharger has to meet in order to get a nutrient variance is an optimization study. When we were sitting down and tweaking SB367, we put that language in with the thought of “operational optimization” ( i.e., what can the operators do with the existing infrastructure to better improve nutrient removal?). The phrase “optimization study”, of course has already been interpreted by some consultants to mean some sort of engineering approach that typically might include a small (or not) capital project. In one case, the consultant’s approach to an optimization study was to evaluate the optimal use of alum, with the basic strategy of decreasing the addition of alum until the effluent TP went all the way up to the permit limit (an increase in TP of about 5 times the current value). That’s not really what we had intended.

Over the last few years, we’ve been doing optimization training and support with the operators to help them remove nutrients better. Some of this effort is classroom training and some is on-site assistance. After we do the on-site assistance, our contractor, Grant Weaver, has been writing emails to the community’s operator laying out strategies for optimization – basically writing up what was discussed on-site. Tina and I discussed the idea of turning this written document into an optimization report for the purpose of complying with the nutrient variance requirement.

So, attached is one of our first stabs at what I would consider an optimization study/report. I’d like to see what you all think of this format in terms of meeting the variance requirement. It is very basic in its form, but contains sufficient direction to the operators of fairly advanced operational strategies for enhanced nutrient removal and it has proven to be very effective.

Oh, in this particular community, they are in the design phase of an upgrade (the addition of a secondary clarifier – not for nutrient removal), so this report does include some recommendations associated with that upgrade. That is generally not the case. Our efforts here are to avoid upgrades as much as possible.

So, please let me know what you think.

Thanks.

Paul